

## NSCAT AND QUIKSCAT WINDS REVEAL THE MYSTERIOUS SOMALI JET

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Forecasting southwest monsoon rainfall over India remains a scientific 'grand' challenge. The advent of satellites provided, for the first time, adequate surface wind speed and direction data to observe the space-time structure of the rapid onset and subsequent pulsations of the Somali Jet and to relate the Somali Jet to onset and pulsation of Indian rainfall. The 2-day,  $1^\circ \times 1^\circ$  averaged NSCAT surface wind vector measurements in June 1997 yielded the first look of the Somali Jet onset: suddenness and small area; expansion towards the east; and nearly three-fold increase in surface wind divergence in the eastern Arabian Sea, which produced a 40% increase in the amount of integrated cloud liquid water, suggesting a connection between the Somali Jet and Indian west coast rainfall. Twelve years of 2-day,  $1^\circ \times 1^\circ$  averaged SSM/I wind speed data showed that the onset of the Somali Jet always preceded the onset of rainfall in Goa. The 1-day,  $1^\circ \times 1^\circ$  averaged QuikScat surface vector wind data product, although it missed the onset of the Somali Jet because QuikScat data first appeared on 20 July 1999, showed pulsations of the Somali Jet with clarity never before seen. In the eastern Arabian Sea, daily Quikscat divergences were significantly inversely correlated with integrated cloud liquid water, which substantiates the hypothesis about the important role of the Somali Jet on Indian west coast rainfall. Remarkable advances in real-time processing of QuikScat data will allow presentation of the 2000 Somali Jet onset and subsequent pulsations, and comparison with NSCAT results.